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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/066,033
Filing Date: January 31, 2002
Appellant(s): PONOMARENKO, ANDREI

Christopher L. Bernard
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 3rd, 2007 appealing from the Office action mailed July 13th, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,009,466	AXBERG et al	12-1999
6,260,062	DAVIS et al	7-2001
6,115,715	TRAVERSAT et al	9-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 10-30 are pending examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10-12 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Axberg et al* (USPN 6,009,466) in view of *Davis et al* (USPN 6,260,062).

a. Per claim 10, *Axberg et al* teach a system of managing a configuration database within a network management program for a SONET ring network, the system comprising:

- a plurality of managed objects representing logical representations of network entities that can be configured and modified through transactions executed by the network management program, wherein one or more of the managed objects include an object reference and a storage location pointer to another of the managed objects, the another of the managed objects being accessed by a combination of the object reference and the storage location pointer associated with the one or more of the managed objects (*col.2 lines 1-67, col.4 lines 28-67, col.7 line 15-col.9 line 61, col.10 lines 10-15, col.11 line 12-col.12 line 44 and col.13 lines 7-16*);

- an agent process that receives transaction commands from a command handler (*col.6 line 61-col.7 line 14, col.11 lines 2-44, col.12 lines 6-14, col.14 lines 8-42 and col.16 lines 18-40*);

- a database manager that receives the transaction commands from the agent process (*col.6 line 61-col.7 line 14, col.11 lines 4-44, col.12 lines 34-44 and col.16 lines 18-40*);

- a database file that stores commands from the database manager (*col.7 lines 5-35, col.15 lines 46-58 and col.16 lines 25-29*); and
- a transaction log file that stores actions included within transactions issued by the database manager (*col.15 lines 49-58 and col.16 lines 25-29*).

Axberg et al teach the system's implementation with other communication networks (*col.4 lines 28-41 and col.16 lines 11-39*), yet fail to explicitly teach implementation on a SONET ring network. However, *Davis et al* disclose utilizing a SONET network for element management (*col.4 lines 40-52*).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Axberg et al* and *Davis et al* for the purpose of extending the functional capability of the system for use on a SONET; because it would provide additional compatibility features with optical communication, for yielding higher bandwidth and increased speeds.

b. Per claim 11, *Axberg et al* teach the system of claim 10 wherein logical dependencies among each of the managed objects are maintained through the linking of the storage location pointers in the managed objects (*col.2 lines 15-28 and 47-67, col.8 lines 29-40 and col.9 lines 36-61*).

c. Per claim 21, *Axberg et al* teach the method of claim 10, wherein the one or more of the managed objects is accessed through direct links through the another of the managed objects (*col.8 lines 18-56, col.9 lines 5-61 and col.11 line 59-col.12 line 44*).

d. Per claim 12, *Axberg et al* teach the system of claim 11 wherein actions that modify the managed objects are stored in the database file and the transaction log file (*col.15 lines 46-58*).

Claims 13-20 and 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Axberg et al* (USPN 6,009,466) and *Davis et al* (USPN 6,260,062), in view of *Traversat et al* (USPN 6,115,715).

a. Per claim 13, *Axberg et al* and *Davis et al* teach a system of claim 12 as applied above, yet fail to explicitly teach the system wherein, in the event of an abort condition, a most recent configuration state of the network is restored by re-applying the transactions stored in the transaction log file, and resolving the pointer links contained in affected ones of the managed objects. However, *Traversat et al* disclose fail conditions such as when a transaction is aborted and performs updating to revert back to saved-state configuration (*col.9 line 42-col.10 line 60*).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Axberg et al, Davis et al* and *Traversat et al* for the purpose of providing a method for failure resolution in the event of an abort condition; because it would provide maintenance and security for the integrity and stability of the configuration and transaction data in case of system failures or errors.

b. Claim 16 contains limitations that are substantially similar to claims 10, 12 and 13 and is therefore rejected under the same basis.

c. Per claim 14, *Traversat et al* teach the system of claim 12 further comprising a free space list maintained by the database manager, the free space list containing record number and size information for the managed objects that have been deleted and are available for use (*col.7 lines 20-57 and col.8 lines 3-59*).

d. Per claim 15, *Traversat et al* teach the system of claim 14 wherein a present state of the managed objects is stored in a memory buffer upon modification by one or more of the actions comprising one of the transactions (*col.8 line 42-col.9 line 41 and col.10 lines 1-47*).

e. Per claim 17, *Axberg et al, Davis et al* and *Traversat et al* teach the apparatus of claim 16 as applied above, *Axberg et al* further teach the apparatus further comprising a memory map storing the object reference information and the pointer information for each of the managed objects (*col.2 line 49-col.3 line 22, col.8 lines 8-40, col.9 lines 8-61 and col.10 lines 10-61*).

f. Per claim 18, *Axberg et al, Davis et al* and *Traversat et al* teach the apparatus of claim 17 as applied above, *Davis et al* further teach wherein the computer network comprises a parallel ring network including a first working network and a second standby network coupling each network element in the network (*col.9 lines 37-54*).

g. Claim 23 contains limitations that are substantially similar to claims 10, 16 and 18 and is therefore rejected under the same basis.

h. Per claim 19, *Axberg et al, Davis et al* and *Traversat et al* teach the apparatus of claim 18 as applied above, *Traversat et al* further teach the apparatus of claim 18 wherein the agent process comprises one of an alarm manager process, an automatic protection process, and a configuration manager program (*col.7 line 19-col.8 line 59 and col.9 line 7-col.10 line 60*).

i. Claim 20 is substantially similar to claims 10 and 21 and is therefore rejected under the same basis.

j. Claims 22 and 30 are substantially similar to claim 21 and are therefore rejected under the same basis.

k. Claim 24 is substantially similar to claim 11 and is therefore rejected under the same basis.

l. Claim 25 is substantially similar to claim 12 and is therefore rejected under the same basis.

m. Claim 26 is substantially similar to claim 13 and is therefore rejected under the same basis.

n. Claim 27 is substantially similar to claim 14 and is therefore rejected under the same basis.

o. Claim 28 is substantially similar to claim 15 and is therefore rejected under the same basis.

p. Claim 29 is substantially similar to claims 13 and 19 and is therefore rejected under the same basis.

(10) Response to Argument

A. Appellant argues—with respect to independent claim 10—that *Axberg et al* in view of *Davis et al* fail to teach the following claimed features: (1) a network management system, (2) a managed object, (3) an agent process that receives transaction commands from command handler, and (4) a database manager that receives transaction commands from the agent process.

Examiner respectfully disagrees. Firstly, *Axberg et al* clearly disclose a network management system which allows a user to configure hardware on the network via a graphical user interface (*Title, col.1 lines 7-9, col.2 lines 49-55, col.16 lines 18-32*). Secondly, *Axberg et al* refers to the configured network storage devices/resources as a "management set of objects" as logical representations of the physical devices/resources in a graphical interface (*col.7 lines 51-67, col.8 lines 9-40, col.11 lines 12-18*), which precisely fulfills the claimed limitation of managed objects "representing logical representations of network entities that can be configured". Thirdly, *Axberg et al* teaches an agent portion that polls and monitors hosts and I/O controllers of the network to determine the network topology and report error conditions (*col.6*

line 65-col.7 line 5). From the information provided by the agent portion to the storage management program the program is able to discern the network devices/resources that are available to the user for selecting the intended network devices/resources for configuration (*col.3 lines 7-19, col.12 lines 39-44*). Furthermore, the selections and configurations made by the user in the storage management program are stored and saved for output (*col.13 lines 17-43, col.15 lines 46-58*). Appellant's arguments are therefore unpersuasive.

B. Appellant argues—with respect to independent claim 10—that the motivation to combine *Axberg et al* with *Davis et al* was made through hindsight reconstruction.

Examiner respectfully disagrees. In response to Appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Nonetheless, Examiner notes that *Axberg et al* provision implementation of the storage management program over different types of networks with different types of communication media and protocols, including optical storage devices, optical libraries and optical disks (*col.4 lines 28-32, col.16 lines 7-17 and 33-38*). However, *Davis et al* makes obvious the network management capabilities over a SONET network (*col.4 lines 40-49*) for extending the use to optical communication systems and networks. Appellant's arguments are therefore unpersuasive.

C. Appellant argues—with respect to dependent claim 11—that the combination of *Axberg et al* with *Davis et al* fails to teach that "logical dependencies are maintained through the linking of the storage location pointers in the managed objects".

Examiner respectfully disagrees. *Axberg et al* teach representing logical dependencies within the class library objects of the storage management program—specifically, that devices are represented along with the devices that inherit from it and are linked to it via connection pointers (*col.2 lines 59-67, col.8 lines 17-40, col.9 lines 55-58, col.11 line 47-col.12 line 44*). *Axberg et al* further teach connection objects that represent links joining two physical devices together with reference to the ports that are involved in the connections (*col.9 lines 8-45, col.10 lines 31-42*). Appellant's arguments are therefore unpersuasive.

D. Appellant argues—with respect to dependent claim 12—that the combination of *Axberg et al* with *Davis et al* fails to teach that "actions that modify managed objects even occur, much less are stored in the database file that also stores commands…in the transaction log file".

Examiner respectfully disagrees. *Axberg et al* teach the user's actions made to configure managed network objects are stored and can be output as a list of instructions for the installer of the storage network (*col.11 lines 14-18, col.15 lines 49-56*). Furthermore, the modification of managed objects occurs with each update (from event monitoring) of managed network objects that are available to the user (*col.7 lines 2-5, col.10 lines 42-48, col.13 lines 36-43, col.14 lines 2-7*). Appellant's arguments are therefore unpersuasive.

E. Appellant argues—with respect to dependent claims 21 and 30—that the combination of *Axberg et al* with *Davis et al* fails to teach that "one or more of the managed objects is accessed through direct links through the another of the managed objects".

Examiner respectfully disagrees. As explained in above in response to argument C, *Axberg et al* clearly that the managed devices are represented along with the devices that inherit from them and are linked to it via connection pointers (*col.2 lines 59-67, col.8 lines 17-40, col.9 lines 55-58, col.11 line 47-col.12 line 44*), which in turn allows for accessibility to a device and its descendants or other attached devices. Appellant's arguments are therefore unpersuasive.

F. Appellant argues—with respect to dependent claims 13 and 26—that the combination of *Axberg et al* and *Davis et al* with *Traversat et al* "would not have been obvious…to provide in the event of an abort condition, a most recent configuration state of the network is restored by re-applying the transactions stored in the transaction log file and resolving the pointer links contained in the affected ones of the managed objects".

Examiner respectfully disagrees. As stated above in the previous responses to the arguments, the embodiments of *Axberg et al* clearly teach and fulfill the claimed features of managed objects (*col.7 lines 51-67, col.8 lines 9-40, col.11 lines 12-18*), pointer links (*col.2 lines 59-67, col.8 lines 17-40, col.9 lines 8-58, col.10 lines 31-42, col.11 line 47-col.12 line 44*) and a transaction log file (*col.11 lines 14-18, col.15 lines 49-56*). While *Axberg et al* teach the configuration of network hardware (*Abstract*), *Axberg et al* fail to explicitly teach restoring to a previous configuration if an abort condition occurs. However, *Traversat et al* teaches transaction management in a configuration database, wherein if a failure or abort event occurs the configuration update transaction is aborted and the configuration database reverts (or rollback) to

a previous configuration state (*col.9 lines 42-51, col.10 lines 16-31*). The inventive nature of *Axberg et al, Davis et al* and *Traversat et al* concerns network management and configuration, thus the improvement offered by *Davis et al* for implementation in a SONET network and the modification of *Traversat et al* to provide security back-up features for the configuration information are obvious. Consequently, the combination of *Axberg et al* and *Davis et al* with *Traversat et al* would have been obvious to one of ordinary skill in the art at the time the invention was made because it provides configuration maintenance and security in the system by protecting the integrity and stability of the configuration and transaction data in case of system failures or errors. Appellant's arguments are therefore unpersuasive.

G. Appellant argues—with respect to dependent claims 14 and 27—that the combination of *Axberg et al* and *Davis et al* with *Traversat et al* "would not have been obvious…to provide a free space list maintained by the database manager, the free space list containing record number and size information for the managed objects that have been deleted".

Examiner respectfully disagrees. *Axberg et al* teach that the storage management program keeps track of the managed objects that are available by implementing monitoring and polling functions (*col.3 lines 7-19, col.6 line 65-col.7 line 5, col.12 lines 39-44*). The combination with *Traversat et al* is made obvious by explicitly teaching and offering a modification that provides a database that stores a device and interface namespace and further updates the database whenever a device is attached to or removed from the network for manipulating a transaction lock on the device (*col.7 line 43-col.8 line 2, col.8 lines 48-67, col.10 lines 1-5*). Appellant's arguments are therefore unpersuasive.

H. Appellant argues—with respect to dependent claims 15, 28 and 29—that the combination of *Axberg et al* and *Davis et al* with *Traversat et al* "would not have been obvious…to provide storage of the present state of the managed objects in a memory buffer upon modification by one or more of the actions comprising one of the transactions".

Examiner respectfully disagrees. *Axberg et al* teach that the storage management program keeps track of the managed objects that are available by implementing monitoring and polling functions (*col.3 lines 7-19, col.6 line 65-col.7 line 5, col.12 lines 39-44*), which implies that the state of the polled and monitored devices is maintained and updated. However, *Traversat et al* further teach the maintenance and storage of transaction and device state information in the configuration database (*col.10 lines 18-47*). Appellant's arguments are therefore unpersuasive.

I. Appellant argues—with respect to claims 16, 17 and 22—that the combination of *Axberg et al* and *Davis et al* with *Traversat et al* fails to teach "a loader module for loading a plurality of managed objects into system memory of the computer network upon a start-up even of the computer network…accessing of managed objects through direct links through other managed objects...an agent process for creating new transactions or open existing transactions affecting one or more of the managed objects modified by the transactions...[and] a transaction saving module for saving the loaded transactions in non-volatile memory".

Examiner respectfully disagrees. These arguments are similar to the above arguments A, B, C, E and H have been addressed in the respective responses.

J. Appellant argues—with respect to dependent claim 18—that the combination of *Axberg et al* and *Davis et al* with *Traversat et al* "would not have been obvious…to provide a computer network comprising a parallel ring network and a second standby network coupling each network element in the network".

Examiner respectfully disagrees. As stated above in response to argument B, *Axberg et al* provision implementation of the storage management program over different types of networks with different types of communication media and protocols, including optical storage devices, optical libraries and optical disks (*col.4 lines 28-32, col.16 lines 7-17 and 33-38*), while also provisioning for the use of multiple networks (*col.3 lines 56-67*). However, *Davis et al* makes obvious the network management capabilities over a SONET network (*col.4 lines 40-49*) for extending the use to optical communication networks. *Davis et al* further teach provisioning a "backup facility" for the network (*col.9 lines 37-48*). Appellant's arguments are therefore unpersuasive.

K. Appellant argues—with respect to dependent claim 19—that the combination of *Axberg et al* and *Davis et al* with *Traversat et al* fail to teach "the agent process as comprising one of an alarm manager process, an automatic protection process and a configuration manager program".

Examiner respectfully disagrees. As stated above in response to argument A, *Axberg et al* clearly teach an agent process that performs monitoring and reporting of error conditions (*col.7 lines 2-5*), which achieves claimed the alarm manager process. Nonetheless, *Traversat et al* further teach a configuration manager program and automatic protection process realized as a part of the JSD configuration database that capable of protecting the data by administering lock for the transactions and rollback functions in case of a system failure (*col.7 line 19-col.8 line 59 and col.9 line 7-col.10 line 60*). Appellant's arguments are therefore unpersuasive.

L. Appellant argues—with respect to dependent claim 20—that the combination of *Axberg et al* and *Davis et al* with *Traversat et al* fail to teach the network defined as "a SONET ring network and the managed objects comprise portions of control cards within nodes of the computer network".

Examiner respectfully disagrees. As previously stated, *Axberg et al* refers to the configured network storage devices/resources as a "management set of objects" (*col.7 lines 51-67, col.8 lines 9-40, col.11 lines 12-18*), wherein the managed objects of the network comprise storage device with include magnetic and optical disks (*col.5 lines 18-29*), adapters (*col.8 lines 53-56*), internal and external controllers (*col.8 lines 49-67*). Appellant's arguments are therefore unpersuasive.

M. Appellant argues—with respect to claims 23, 24 and 25—that the combination of *Axberg et al* and *Davis et al* with *Traversat et al* fail to teach a system with "a plurality of managed objects representing logical representations of network entities that can be configured and modified through transactions executed by the network management program, wherein at least a first one of the managed objects includes object reference information and pointer information in order to access at least a second one of the managed transaction...accessing of managed objects through direct links through other managed objects...an agent process that receives transaction commands from a command handler...[and] a database manager that receives transaction commands from the agent process".

Examiner respectfully disagrees. These arguments are similar to the above arguments A, B, C, E and H have been addressed in the respective responses.

For the above reasons, it is believed that the rejections should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this Examiner's Answer.

Respectfully submitted,

/Kristie D Shingles/
Examiner, Art Unit 2141

/William C. Vaughn, Jr./

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